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IHR ZEICHEN / YOUR REF. **OSP-1078** UNSER ZEICHEN / OUR REF. **25426P EP/PRha**

European Patent Application No. 01 112 618.2
Title: Method and apparatus for position detection
Honda Giken Kogyo Kabushiki Kaisha

Dear Mr. Shiga:

With reference to our letter dated Sep 14, 2004 we have now received the complete search report of the EPO, copy of which is enclosed. Copies of the publications considered to be relevant are also enclosed.

We recommend that the references for categories X and Y - if any - be examined carefully. This can be of importance for the later decision whether examination should be requested or, in case it has already been requested, whether it should be maintained.

In the annex to the search report the corresponding printed patent specifications in other countries are indicated for the cited printed patent specifications.

Please note that the present search report has been drawn up for all claims.

We further advise you that the EPO approved the following items:

(x) Abstract () Title (x) Drawing

Very truly yours,



Dr. J. Prechtel

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Encls.

Communication
search report
publications

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DATUM / DATE

Jan 05, 2005

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2 8. 12. 04

Zeichen/Ref./Réf. 25426P EP	Anmeldung Nr./Application No./Demande n°/Patent Nr./Patent No./Brevet n°. 01112618.2
Anmelder/Applicant/Demandeur/Patentinhaber/Proprietor/Titulaire Honda Giken Kogyo Kabushiki Kaisha	

COMMUNICATION

The European Patent Office herewith transmits

- ☒ the European search report
- ☐ the declaration under Rule 45 EPC
- ☐ the partial European search report under Rule 45 EPC
- ☐ the supplementary European search report concerning the international application under Article 157(2) EPC relating to the above-mentioned European patent application. Copies of the documents cited in the search report are enclosed.
- EP-A 66
Re

The following specifications given by the applicant have been approved by the Search Division :

- ☒ Abstract ☐ Title ☒ Figure
- ☐ The abstract was modified by the Search Division and the definitive text is attached to this communication.
- ☐ The following figure will be published with the abstract, since the Search Division considers that it better characterises the invention than the one indicated by the applicant.

Figure:

- ☒ Additional copy(copies) of the documents cited in the European search report.

REFUND OF THE SEARCH FEE

If applicable under Article 10 Rules relating to fees, a separate communication from the Receiving Section on the refund of the search fee will be sent later.



EPO Form 1507 02.93

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

- ☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:



The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1, 6, 11

Eliminating moving reference points from the position
calculation

2. claims: 2,7,12

Reducing the effect of variations in distance data obtained
from images in the process of determining the position

3. claims: 3,4,8,9,13,14

Increasing the accuracy of the calculation of the position
by using only the reference characteristic points whose
positions are known with most certainty

4. claims: 5,10,15

Enabling the calculation of a position in cases when a
geometric calculation of position is not possible



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
R1 X	WO 99/53335 A (POROPAT GEORGE ; COMMW SCIENT IND RES ORG (AU)) 21 October 1999 (1999-10-21) * the whole document *	1-4,6-9, 11-14	G01S11/12
Y		5,10,15	
R2 A	US 5 777 690 A (TAKEDA NOBUYUKI ET AL) 7 July 1998 (1998-07-07) * abstract *	1,6,11	
R3 A	US 5 051 906 A (KING STEVEN J ET AL) 24 September 1991 (1991-09-24) * abstract * * Background of the Invention * * column 1, line 18 - line 44 * * column 3, line 50 - column 4, line 57 * * column 2, line 3 - line 9 *	2,7,12	
R4 A	WO 99/21026 A (HOLMQUIST FREDRIK ; APOGEUM AB (SE)) 29 April 1999 (1999-04-29) * abstract * * page 3, line 13 - line 30 * * page 6, line 7 - line 14 * * page 7, line 13 - line 29 * * page 8, line 15 - line 22 * * page 9, line 21 - line 27 * * page 10, line 24 - page 13, line 8 * ----- -/-	2-4,7-9, 12-14	TECHNICAL FIELDS SEARCHED (Int.Cl.7) G01S
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 15 December 2004	Examiner Ó Donnabháin, C.
<div>CATEGORY OF CITED DOCUMENTS</div> <div><div>X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document</div><div>T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons ----- & : member of the same patent family, corresponding document</div></div>			



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
R5 X	CHENAVIER F ET AL: "Position estimation for a mobile robot using vision and odometry" PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON ROBOTICS AND AUTOMATION NICE, MAY 12 - 14, 1992, LOS ALAMITOS, IEEE COMP. SOC. PRESS, US, vol. VOL. 3 CONF. 8, 12 May 1992 (1992-05-12), pages 2588-2593, XP010027677 ISBN: 0-8186-2720-4 * abstract * * page 2588, left-hand column * * 4. Updating the robot position *	2,7,12	
R6 X	GB 2 116 000 A (ELLIOTT BROS) 14 September 1983 (1983-09-14) * page 1, line 58 - line 122 *	5,10,15	
R7 X	KOKICHI SUGIHARA: "SOME LOCATION PROBLEMS FOR ROBOT NAVIGATION USING A SINGLE CAMERA" COMPUTER VISION GRAPHICS AND IMAGE PROCESSING, ACADEMIC PRESS, DULUTH, MA, US, vol. 42, no. 1, 1 April 1988 (1988-04-01), pages 112-129, XP000110801 * the whole document *	3,4,8,9,13,14	TECHNICAL FIELDS SEARCHED (Int.Cl.7)
R3 Y	EP 0 892 278 A (FORSVARETS FORSKNING) 20 January 1999 (1999-01-20) * abstract *	5,10,15	
The present search report has been drawn up for all claims			
4	Place of search Munich	Date of completion of the search 15 December 2004	Examiner Ó Donnabháin, C
CATEGORY OF CITED DOCUMENTS			
T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 01 11 2618

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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			US 6308118 B1	23-10-2001
			US 6259979 B1	10-07-2001
GB 2116000	A	14-09-1983	NONE	

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

EP 01 11 2618

15-12-2004

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0892278 A	20-01-1999	NO EP 973275 A 0892278 A2	18-01-1999 20-01-1999

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